PSYCHOLOGY IN SECONDARY SCHOOLS

PSYCHOLOGY appears in the curricula of many secondary schools, notably in academies which pretend to give a general intellectual outfit and in such public high schools for girls as assume in part the function of training schools for teachers. It appears in the former case in general as a short course taught from a book by a teacher who knows little more about the subject than the book's contents. In the latter case the course may be longer, but its nature and administration are equally narrow. Here and there a gifted teacher makes the course dignified and useful.

No one has seriously attempted to bring about general improvement in these courses or to urge the introduction of proper work in psychology into the secondary schools in general or to define the position which psychology ought to take in their curricula. This is due partly to the general disregard of philosophical studies by American secondary schools, partly to the mere newness of psychology as an empirical study even in the colleges, and partly to the failure of the type of courses mentioned above to equal the other work of the schools in effectiveness from the point of view of teachers or in attractiveness from the point of view of society. The disregard of the subjective sciences in general seems to be conventional rather than rational, for the French system emphasizes them. The failure of the courses given seems to have no reference to the fitness of the subject itself, but only to be one instance of the general failure of the short courses in science, history, or literature, by means of which we have been giving inferior students a chance to get a diploma for three or four years of mnemonic experiments.

It is a thankless task to propose a new subject for the secondary school lists. And I am fully convinced that the probability of getting good teachers and the adaptation of the

subject-matter to immature and uninformed minds should be important considerations to the organizer of a curriculum. We cannot, from a theoretical investigation of the needs of boys and girls in life today, decide as to the propriety of any change in the course of study in any school. I think that at present even the most ardent psychologists would advise most school officers to get along without a course in psychology and to drop the courses they have. On the other hand, schools that decide to have a reputable course and to pay for it may soon, if not at once, find efficient teachers, scientific and teachable manuals, convenient apparatus for experimental work, and dignity and appreciation for the course. Only when we give to psychology the same chance we are giving in our best schools to the other sciences shall we see whether or not it is a profitable study that will survive.

It seems worth while to ask what might be done with such a course, especially since it so happens that the latest developments of psychology are perhaps the best fitted to engage the attention of young students, and that the courses actually given in high schools bear almost no relation to the present status of the science.

Speaking roughly, a course in psychology in a high school will either present descriptions and definitions of mental states in some such way, for instance, as Sully's *Outlines of Psychology* does, or will consist of a college course in experimental psychology much diluted, or of a semi-physiological course dealing with those aspects of human activity which involve consciousness, or of a general course about human nature distinguished from the opinions of poets, novelists, preachers and everyday folks, by a scientific method and orderly progress. There may, of course, be combinations of these different types. The first two are more likely to be the types chosen, but the last two seem to me to be worthy of consideration and to show promise of being the types that will eventually prevail.

The first course mentioned would amount to a more or less truthful inventory of our feelings, their registration under various long names, and definition in highly abstract phrases in a

sort of game of comparison, classification, etc. This type of work we should not wish to install in the high school in any subject. It is an unfortunate fact that nomenclature, definitions and endless divisions into species make a teachable book and delude teachers and students into the belief that they are solving the problems of existence. They also appeal to the classifying interest, which is likely to be strong in superior minds, and so, because they can be comprehended and learned only by capable students, delude us all into thinking that studying them makes students capable. Such a course in psychology might be a good test of intelligence, but it would not produce or increase it. The fact that so many text-books on teaching imply previous training in some such course should rather warn us against it than dispose us to disregard its obvious faults.

If, instead of attempting to strengthen the same type of course as is now given, the schools intrust the organization of new courses to college graduates recommended as fit to teach psychology, the result will be in most cases a course of the same style as the college course, but weakened and necessarily more superficial. For the majority of teachers are quite incapable of adapting themselves intelligently to new conditions and of inventing ways to realize educational aims in the face of difficulties. They will teach what they have been taught in the way they have been taught it. We shall see high-school boys and girls measuring the delicacy of sense discrimination, mixing colors, taking reaction times, noting space illusions, and so on.

This direct transfer of college courses in science into the high school has succeeded fairly well with physics and chemistry, less well with economics and the biological studies. There seem to be especial hindrances in the case of experimental psychology. At the outset it must be confessed that there is no unanimity as to the proper contents of such a course even among college teachers. What one would set up as a standard would not be accepted by the others. Moreover, the greater part of what is taught in college courses is taught, not by the experiments, but by the *teacher's interpretation of them.* Thus different classes under different instructors get different psychology even when

they have the same experiments. There are more weighty objections. The experiments of the college courses often do not repeat crucial tests of hypotheses or exemplify broad laws or principles in the way that experiments in physics and chemistry may. The experiments often comprise a few determinations of some phenomenon, real knowledge of which involves the statistical treatment of a large number of determinations. With high-school classes the few would be fewer still, and the student would really be finding out nothing, save how someone might find out something by doing the experiment in a quite different way. Moreover, the complexity of the apparatus tends to obscure the question he is trying to answer or the fact he should discover. With chronometers, color wheels, stereoscope, all forms of graphic records and of electrical methods of stimulation or registration, the mechanism conceals the psychological fact, and is often harder to understand than it. One has to repeatedly go through the process which the teacher of biology finds so troublesome in the single case of the microscope. Furthermore, individual differences, normal variability and the impossibility of convenient perfect control make it impossible to definitely criticise the student's accuracy as we can do in physical measurements. A boy who measures the weight necessary to break a standard wire, or the specific gravity of lead, and gets an inaccurate answer, can be told emphatically that he is wrong; can see that he is wrong and can do better. But when a boy finds that his partner in the laboratory can just distinguish 130 grams from 135, the instructor himself doesn't know whether the boy has been accurate or not. There is no chance to tell definitely by results whether you have done well, done better than the rest of the class, done as well as you could possibly do, and so one great motive is absent, and one great lesson in science is missed. Finally, the experiments now in vogue in college courses too often have meaning only in the light of detailed knowledge of physics and physiology. A physiologist might, indeed, claim that the experiments on sensation and perception treated merely a fraction of one division of his science, namely, the physiology of the nervous system. He might add

that this was one of its most specialized divisions, and one least fitted for uninformed students. Now it is practical folly to give a course in a high school which can be studied to advantage only by students equipped in physics and physiology. It involves too complicated a system of group electives, and is likely to force the instructor to break the continuity of the course in order to supply the external matter needed for the comprehension of some experiment. The typical experiments on sensation and perception are too specialized for a high-school course.

A modification of the ordinary course in experimental psychology thus seems ill-fitted to give a scientific view of vital facts in mental life, or to develop habits and ideals of accurate and thoughtful experimentation and observation. It seems also to be an especially hard course to administer.

The other probabilities for a secondary-school course were, I said, a course in the physiology of human behavior and a course which should try to introduce students to the scientific study of human life in all its aspects. These we may now consider.

It would be perfectly feasible for an instructor of moderate capabilities who had a class of third- or fourth-year students for a quarter of their time during a school year to teach them, largely through direct experience of the realities concerned, the following: The fact that human and animal activities (conduct or behavior as distinct from such activities as respiration, circulation, excretion, etc.) are due to a nervous system, sensitive to outside influences; the nature of end organs, muscles and the nervous apparatus connecting them; the elementary facts concerning the way that each of these functions; the physiological parallel of an act in response to an outside stimulus; of an act in response to a thought; the existence and explanation of instincts, including instinctive emotions; the simplest form of modification of behavior in the learning of animals; the presence of the same thing in man; the nature of more complicated ways of modifying behavior; the mental factors concerned in the latter; the law of habit in the nervous system; its illustration in automatic activities, in perceptions and illusions, in the association of ideas and memory, in the tendency of ideas to issue in movement, in

suggestion and inhibition; and a number of details concerning our sensitivity to outside stimuli, the coördination, accuracy and force of our movements, and the effects of inborn capacity, practice, fatigue, etc.

The course would present, through a study of actual facts, the broad principles concerning our adaptations of our movements to the situations we meet. Such a course could be given independently, but would still fit in well with work in physiology or zoölogy. It would have the advantages of appealing to the interests in action, use and adaptation; of supplying the student with the means of intelligent observation and thought concerning his own daily life. One is tempted to say that it would form a natural preliminary to all the humanistic sciences. In so far as any high-school course could share in so high-sounding an aim, it would.

The other possibility to be considered is a course which should not attempt to give anything like a systematic account of the elementary facts of psychology, but should take up a number of concrete aspects of human thought or conduct and try to teach young students to study them scientifically. Such a course would have the disciplinary value of habituating students to better ways of thinking and learning about human nature, and might arouse a desirable zeal for the explanation of human behavior which would lead them later to take a systematic course. Its efficiency would, however, imply rather superior gifts in the instructor in charge.

Concrete examples may show better what such a course might do. Suppose, for instance, that the instructor set to the class the problem of finding out how they differed in quickness, accuracy, memory, etc., in short, all they could find out concerning their mental powers, and let the work consist of numerous tests. The students might work out results and correlations. If each test was repeated enough times to get an accurate mean, results on the correlation of abilities in twenty or thirty people would have real value.

In this way students could study experimentally, mostly by class tests, the delicacy of discrimination in different fields,

color vision, acuteness of vision, memory with different sorts of data, the rate and accuracy of perception with different sorts of data, the rate and accuracy of association, spontaneous and controlled, the force and rate and accuracy of movements of all sorts—attention, fatigue, practice, etc. They would start out with the question, "How well can I do a certain performance?" They would be led to ask, "Why do I do differently at different times?" "What powers in me go together?" "Am I more like my own parents than someone else's?" "Why do people differ in these matters?" "Why can I do better with practice?" "What are the factors involved in all these tests and in my school work and other thinking and action?" They would get or be given answers to these and other similar questions; they could learn accuracy in experiment and statistical treatment; they could learn to doubt and inquire; they could be led later to study more or less of a systematic course in human behavior, such as was previously outlined.

Suppose the course took up the question, "What are the differences between your thinking and that of a dog or a cat?" The class could be led to knowledge of the facts of instinct, the animal method of learning, its prevalence in much of their own learning, the function of thoughts and feelings in the animal kingdom, the nervous basis at the bottom of animal and human behavior. Experiments in teaching animals, observation of animals and young children, experiments and observations of their own learning would, of course, be made. In a similar way practice, fatigue, memory, suggestion, habit, and other topics might afford an opportunity for observation, experiment and reading on the basis of nothing more than common-sense knowledge of psychological facts and terms, and might lead to definite study of a few psychological principles. A part of the work of the course should be the presentation of topics for study and methods of studying them by the students, the criticism of these by class and instructor, and the study of selected ones.

The disciplinary value of such a course would be great, for it would teach the student good habits of thought about matters

which he would otherwise settle by guess work or the acceptance of conventional opinion. The problems, too, would be more comparable to those of his real life than are the problems of physics, or chemistry, or biology, or the common laboratory psychology, and consequently the scientific method he learned in the course would be more likely to pass over to his general experience. If in any course in a high school we could bring students to realize that the way to really learn about things is not to argue about them or believe what some one says, but to examine them and notice exactly what happens, to realize also that this can be done with any matter in the universe that is a fact at all, and to get into the habit of trying to do it; that course should be put in the curriculum regardless of what else it taught or failed to teach.

The experienced teacher will regard as faults of such a course besides its requirements of teachers, the lack of system, of sameness in the material, of divisibility into handy lessons and tasks, the danger that pupils will miss the scientific treatment and general principles which require some personal strain and get only the concrete details, and the unfamiliarity of such work to the pupils. These are faults in the sense that they will prevent the course from having that appearance of having accomplished a definite clean-cut piece of work which distinguishes courses in mathematics and languages. But it is a question whether the artificial arrangement of school work into small pellets to be taken in a regular order does not divorce the thinking done in the schools from all the other thinking the scholar does; whether the limitation of mental activity to translating sentences, learning elementary mathematics, remembering facts in history, science, and literature, writing themes and performing simple experiments in science, does not make the student's mind incapable of serious application in many fields; whether the very unfamiliarity of the work I have described is not evidence that it is needed. Pedagogues may admire the regular sequence of achievements of the Latin or mathematics class through its four years, but the real student of education will wonder what comes of it all. There may even be someone willing to declare that

the curse of school practice is its zeal for the teachable, for the course where you can count progress by pages, sums or records of experiments.

Of any course we must not expect too much. Most people are not thinkers or even good learners, and would not be under any provocation. I have throughout said "could" and "may" and "might" to show that all a course in psychology should be asked to do is to provide an adequate stimulus to call forth any capacities that may by good fortune be present in the class, and suitable encouragement to their exercise.

So much for the possible subject-matter of a secondary school course in psychology. If any course is offered, it should provide for at the least, a second year's work. It is utterly absurd to demand a quarter or more of a student's effort for four years for the study of a single language, and to discredit other subjects because in a quarter or even an eighth of that time the student fails to accomplish much. How much is accomplished in the first year of Greek? Is Greek a broader or more intricate subject than biology or history or psychology? There is no reason that I can discover why a student should spend more time on Latin or Greek or French or German or mathematics, than on physics or chemistry or botany or zoology or history or psychology or economics or geography, save the offensive one that he can get nothing out of the former subjects save at great expense of time, whereas he can out of the latter Any new course put on the high school program in competition with the older subjects should be given an amount of time in proportion to its real importance.

This article has tacitly presupposed that a course in psychology in a secondary school should disregard any possibility of later collegiate training. Not that we should cease to make high-school work in a measure a preparation for future study. We ought still to cherish the forlorn hope that we may lead high-school graduates to continue to study for discipline, culture and enjoyment. But we should plan a course with no conscious or unconscious intentions of fitting the student for the intellectual career we ourselves led in college. For a high

school course in psychology to prepare students for college work in psychology is theoretically about as sensible an aim as for an American to spend his time educating himself for foreign citizenship. And no one has suggested any practical justification for it.

In closing I may venture a prophecy that a course in the scientific study of human behavior will probably be the last to enter our secondary schools. It is a perverse tendency of human nature to neglect and postpone the scientific study of any topic in proportion to its importance to human welfare. Those matters in connection with which the exigencies of survival have forced us to adopt some habits or opinions have been the last and least investigated rationally. Men gave serious thought to superstitions before facts, to astronomy before geology, to grammar before rhetoric, to curative before preventive medicine, to the history of wars before the history of institutions, to the social life of ants and bees and wasps before that of men. Because we have had since geologic time to work out by trial and error certain habits of getting along with human beings, we have postponed scientific study of them till now. And I verily believe that we may have to wait for such study in the high schools until we have had courses in entomology, Anglo-Saxon, counterpoint, the history of fancy work and tatting, and Latin epigraphy.

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